

**REMARKS**

The February 27, 2003 Office Action rejects all pending claims 6-12. Claims 6-12 remain pending in the application.

**In the Specification**

Applicant has herein amended the specification to point out that the priority application has now issued.

**Claim Rejections**

Claims 6-12 stand rejected under 35 U.S.C. 102(b) as being anticipated by Abstract Publication No. RD 368034A. Applicant traverses this rejection.

The present invention is directed to a microelectromechanical system (MEMS) that includes a carbon-based layer. The carbon layer may be used as a protective padding or a diaphragm in a MEMS device.

The 368034A Abstract discloses a method for bonding antibodies to sensor substrates. The method includes depositing carbon fullerene uniformly onto a highly ordered surface. Once coated, inducement to the antibody attachment is based on the size of the structure of the fullerene molecule (about 1nm). According to the Abstract, the method is useful for production of biosensors. The 368034A Abstract discloses nothing about the thickness of the layer (e.g., how many layers are deposited). Rather, the Abstract only states that the fullerene is uniformly deposited. Furthermore, the Abstract neither discloses nor suggests anything about using fullerene in tunneling device applications and/or using the fullerene layer as a diaphragm. Accordingly, as discussed below in more detail, none of the claims are anticipated by the abstract.

Claim 6 is neither obvious nor anticipated by the 368034A Abstract, because the Abstract neither discloses nor suggests "A carbon based protective padding" or "the carbon based protective padding further adapted to accurately and reliably establish a one nanometer spacing between a conducting surface on a MEMS device and *a tunneling tip*" (emphasis added), or "said film located at the conducting surface between *the tunneling tip* and the conducting surface" (emphasis added). The Examiner states that the Abstract discloses a tunneling tip (30). Applicant respectfully disagrees with the Examiner's interpretation of the 368034A Abstract. Reference number 30 refers to a IgG antibody that may bond to the fullerene molecule (see p. 3 of the Abstract)--it does not refer to a tunneling tip. Accordingly, claim 6 is neither anticipated nor rendered obvious by the 368034A Abstract, and Applicant therefore requests that the Examiner reconsider and withdraw the 35 U.S.C. 102 rejection to claim 6.

Claim 7 is not anticipated by or rendered obvious in view of the 368034A Abstract, because the Abstract does not teach or suggest "a diaphragm" or "the MEMS device further comprising *exactly one layer* of C60 fullerene" (emphasis added). Consequently, none of claim 7 or claims 8-11 that depend from claim 7 are obvious or anticipated by the Abstract and Applicant therefore request that the Examiner withdraw the 35 U.S.C. 102 rejection to claims 7-11.

Finally, claim 12 is neither anticipated nor obvious in view of the 368034A Abstract, because the Abstract does not teach or suggest "a tunneling tip" or "a piezoelectric element connected to an end of the tunneling tip" or a "surface opposed to the tunneling tip" or "a single layer of C60 fullerene between the tunneling tip and the MEMS device." Applicant therefore requests that the Examiner reconsider and withdraw this rejection to claim 12.

Conclusion

In view of the foregoing remarks, Applicant submits that the claims are allowable over the cited reference and earnestly requests allowance of all pending claims.

If there are any questions with regard to prosecution of this case, the undersigned attorney can be contacted at (818) 354-7770.

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Mail Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450 on

May 13, 2003.

by: John H. Kusmiss

John H. Kusmiss  
Signature

Date of Signature: 5/13/03

Respectfully submitted,

John H. Kusmiss

John H. Kusmiss  
Attorney of Record  
Registration No. 32,149  
Telephone: (818) 354-7770